

REMARKS

In the Office Action, claims 1, 2, 4-7, 9, 10, 12, 13, 16-22, 24-27, 29, 30, 32, 33, 36-41, 43-46, 48, and 49 were rejected and claims 3, 8, 11, 14, 15, 23, 28, 31, 34, 35, 42 and 47 were objected to. The Examiner listed claim 36 as rejected in the Office Action Summary. However, the Examiner failed to indicate the basis of rejection for claim 36 in the “Detailed Action”. By the present Response, claims 1, 18, and 48 are amended, and claims 4 and 24 are cancelled. Upon entry of this amendment, claims 1-3, 5-23, 25-49 will remain pending in the present patent application. Reconsideration and allowance of all pending claims are requested.

Rejections Under 35 U.S.C. §102

In the Office Action, claims 1, 4-5, 9-10, 18, 24-25, 29-30, 38, 43-44, and 48 were rejected under 35 U.S.C. § 102(b) as being anticipated by Habu et al., U.S. Patent No. 6,176,832 (hereinafter “Habu”). Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration. Applicants respectfully assert that the present invention, as recited in independent claims 1, 18, 38, 43, and 48 is patentable over the Habu reference.

Independent claims 1, 18 and 48 are amended to more clearly point out certain of the claimed subject matter. Specifically, each independent claim now recites, in generally similar language, *correcting for pulse wave reflections that travel up the artery*. Claims 38 and 43 already included similar recitations.

The Habu reference discloses a blood pressure measurement system employing an ultrasonic transducer, for detecting shapes of arterial portions, calculating cross-sectional areas of the two arterial portions on the basis of detected sectional shapes, calculating average blood flow velocity in an artery based on the cross-sectional areas, calculating a pulse wave propagation velocity between the two arterial portions, calculating a relative

blood pressure value to a reference blood pressure value based on the basis of calculated blood flow velocity and pulse wave propagation velocity, and calculating an absolute blood pressure value on the basis of relative blood pressure value and the reference blood pressure value. *However, the reference does not teach or disclose a technique of correcting for the pulse wave reflections that travel up the artery.* Applicants respectfully submit that the technique for blood pressure measurement described in the present application includes correcting for such pulse wave reflections.

Habu discloses picking certain ultrasonic samples that are reflected by the blood vessel wall via thresholding, and thereby reducing noise. However, such thresholding is clearly not the same as correcting for the pulse wave reflections that travel up the artery while estimating the velocity of the pulse wave traveling down the artery. Such correction, indeed, makes thresholding unnecessary and enables even what Habu would consider as noisy signals to be used for pressure measurements.

At least because Habu do not disclose or suggest a technique that involves *correcting for the pulse wave reflections that travel up the artery* as claimed, the reference cannot anticipate claims 1, 18, 38, 43 or 48.

Claims 4 and 24 have been cancelled. Claims 5, 9-10, 25, 29-30 and 44 depend directly or indirectly from claims 1, 18, and 43. Accordingly, Applicants submit that claims 5, 9, 10, 25, 29, 30 and 44 are allowable by virtue of their dependency from an allowable base claim. Applicants also submit that the dependent claims are further allowable by virtue of the subject matter they separately recite. Thus, it is respectfully requested that the rejections of claims 1, 5, 9-10, 18, 25, 29-30, 38, 43-44, and 48 under 35 U.S.C. §102(b) be withdrawn.

Rejections Under 35 U.S.C. § 103

Claims 2 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Habu in view of Asmar, U.S. Patent No. 6,511,436. Claims 5-7, 25-27, 39-41, and 44-46 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Habu in view of Katakura, U.S. Patent No. 5,535,747. Claims 12, 13, 32 and 33 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Habu in view of Benthin et al., U.S. Patent No. 4,660,564. Claims 16, 17 and 37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Habu in view of Brisken, U.S. Patent No. 4,530,363. Claims 19-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Habu in view of Mault, U.S. Patent Application No. 2002/0103435. Claim 49 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Habu in view of Okada et al., U.S. Patent No. 6,673,020 (hereinafter “Okada”).

The Habu reference, as discussed above, fails to teach, suggest or disclose each and every aspect of the invention as claimed in the independent claims 1, 18, 38, and 43. Claims 2, 5-7, 12, 13, 16-17, 19-22, 25-27, 32, 33, 37, 39-41, and 44-46 depend directly or indirectly from claims 1, 18, 38, and 43, and are allowable by virtue of such dependency, as well as for the subject matter they separately recite. Thus, it is respectfully requested that the rejection of claims 2, 5-7, 12, 13, 16-17, 19-22, 25-27, 32, 33, 37, 39-41, and 44-46 under 35 U.S.C. §103(a) be withdrawn.

Applicants respectfully submit that the Habu and Okada references, alone or in combination, do not teach, disclose or suggest all the features recited in independent claim 49. The Habu reference fails to disclose a technique for locating M-mode line through the center of an artery. Indeed, the reference provides no teaching at all as to acquisition of M-mode or B-mode images. The Okada reference discloses acquiring M-mode images, but fails to teach or suggest a technique for locating an M-mode line through the center of an artery.

In short, neither reference teaches or suggests such a technique for locating M-mode line through the center of an artery. As such, any combination of the references would lack any teaching of location of M-mode lines through an artery. The mere fact that Okada discusses acquiring M-mode or B-mode images and uses them for measurement is not sufficient to provide a technique for locating M-mode lines through the center of an artery by determining the location of the center of the artery as claimed. Consequently, the combination of Habu and Okada simply cannot suggest to one skilled in the art all of the recitations of claim 49.

In view of the forgoing considerations, Applicants contend that the references fail to establish a *prima facie* case of obviousness of claim 49. Claim 49 is therefore believed to be clearly patentable over the cited combination, and over combinations with the other secondary references. Thus, it is respectfully requested that the rejection of claim 49 under 35 U.S.C. §103(a) be withdrawn.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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PG
Patrick S. Yoder
Reg. No. 37,479
FLETCHER YODER
P.O. Box 692289
Houston, TX 77269-2289
(281) 970-4545